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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,489	08/07/2003	Mao-Yi Chang	CHAN3214/EM	1409

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EXAMINER

VU, DAVID

ART UNIT PAPER NUMBER

2818

DATE MAILED: 02/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/635,489

Applicant(s)

CHANG ET AL.

Examiner

DAVID VU

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08/07/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 7 recites "inert gas atom is doped by dry etching". How can doping be done by etching?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6 and 8-10 are rejected under 35 U. S. C. 102(e) as being anticipated by Yamazaki et al. (US Pat. 6,812,081, herein after Yamazaki).

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Regarding claim 1, Yamazaki discloses a method for transforming an amorphous silicon layer into a polysilicon layer, comprising: providing an amorphous silicon layer, and doping amorphous silicon layer with an inert gas atom; and heating the surface of amorphous silicon substrate by heat treatment or thermal process (col. 2, lines 40-51; col. 4, line 66 through col. 5, line 11).

Regarding claim 2, Yamazaki discloses that inert gas atom is selected from a group consisting of helium, neon, argon, krypton, xenon (col. 7, lines 42-59).

Regarding claim 3, Yamazaki discloses that inert gas atom is argon (col. 2, lines 1-5 & 42-43).

Regarding claim 4, Yamazaki discloses the atom percentage of inert gas atom in amorphous silicon layer is 0.006 (in the range of from 1 to 0.001) {Yamazaki discloses in col. 2, lines 45-46 that the concentration of Ar in the amorphous silicon layer is $3 \times 10^{20}/\text{cm}^3$; therefore $3 \times 10^{20}/\text{cm}^3 (\text{Ar}) / 5 \times 10^{22}/\text{cm}^3 (\text{Si}) = 0.006$ }.

Regarding claims 5-6, Yamazaki discloses that inert gas atom is doped by plasma chemical vapor deposition (col. 7, lines 60-67 & 22-27).

Regarding claim 8, Yamazaki discloses that polysilicon substrate is a panel of a liquid crystal display (col. 24, lines 8-14).

Regarding claim 9, Yamazaki discloses that heat treatment is an excimer laser annealing (col. 8, lines 56-59).

Regarding claim 10, Yamazaki discloses that the process window of excimer laser is in the range of from 100 to 400 mJ/cm^2 (col. 13, line 66 through col. 14, line 1).

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Vu whose telephone number is (571) 272-1798. The examiner can normally be reached on Monday-Friday from 8:00am to 5:00pm. If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR, Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David Vu

February 10, 2005.